CFG for 'simple_if' function

```
entry:
  call void @llvm.dbg.value(metadata ptr %a, metadata !49, metadata
  ... !DIExpression()), !dbg !58
  call void @llvm.dbg.value(metadata ptr %b, metadata !50, metadata
  ... !DIExpression()), !dbg !58
  call void @llvm.dbg.value(metadata ptr %c, metadata !51, metadata
  ... !DIExpression()), !dbg !58
  call void @llvm.dbg.value(metadata ptr %cond, metadata !52, metadata
  ... !DIExpression()), !dbg !58
  call void @llvm.dbg.value(metadata i32 %n, metadata !53, metadata
  ... !DIExpression()), !dbg !58
  %call = tail call double @getTimeMiliSeconds(), !dbg !59
  call void @llvm.dbg.value(metadata double %call, metadata !55, metadata
  ... !DIExpression()), !dbg !58
  %0 = load i32, ptr @EventSet, align 4, !dbg !60, !tbaa !62
  %call1 = tail call i32 @PAPI_start(i32 noundef %0) #10, !dbg !66
  call void @llvm.dbg.value(metadata i32 %call1, metadata !54, metadata
  ... !DIExpression()), !dbg !58
  %cmp.not = icmp eq i32 %call1, 0, !dbg !67
  br i1 %cmp.not, label %for.cond.preheader, label %if.then, !dbg !68
  T | F
```

```
for.cond.preheader:
  call void @llvm.dbg.value(metadata i32 0, metadata !56, metadata
  ... !DIExpression()), !dbg !69
  %cmp3131 = icmp sgt i32 %n, 0, !dbg !70
  br i1 %cmp3131, label %for.body.preheader, label %for.cond.cleanup, !dbg !72
  T | F
```

```
if.then:
  %1 = load ptr, ptr @stderr, align 8, !dbg !73, !tbaa !75
  %call2 = tail call i32 (ptr, ptr, ...) @fprintf(ptr noundef %1, ptr noundef
  ... nonnull @.str, i32 noundef %call1, ptr noundef nonnull @.str.1, i32 noundef
  ... 37) #11, !dbg !73
  tail call void @exit(i32 noundef %call1) #12, !dbg !73
  unreachable, !dbg !73
```

```
for.body.preheader:
  %wide.trip.count = zext i32 %n to i64, !dbg !70
  br label %for.body, !dbg !72
```

```
for.body:
  %indvars.iv = phi i64 [ 0, %for.body.preheader ], [ %indvars.iv.next,
  ... %for.inc ]
  call void @llvm.dbg.value(metadata i64 %indvars.iv, metadata !56, metadata
  ... !DIExpression()), !dbg !69
  %arrayidx = getelementptr inbounds i8, ptr %cond, i64 %indvars.iv, !dbg !82
  %3 = load i8, ptr %arrayidx, align 1, !dbg !82, !tbaa !85, !range !87
  %tobool.not = icmp eq i8 %3, 0, !dbg !82
  br i1 %tobool.not, label %for.inc, label %if.then4, !dbg !88
  T | F
```

```
if.then4:
  %arrayidx6 = getelementptr inbounds i32, ptr %a, i64 %indvars.iv, !dbg !89
  %arrayidx8 = getelementptr inbounds i32, ptr %c, i64 %indvars.iv, !dbg !91
  %4 = load i32, ptr %arrayidx8, align 4, !dbg !91, !tbaa !62
  %arrayidx11 = getelementptr inbounds i32, ptr %b, i64 %indvars.iv, !dbg !92
  %5 = load i32, ptr %arrayidx11, align 4, !dbg !92, !tbaa !62
  %6 = trunc i64 %indvars.iv to i32, !dbg !93
  %mul21 = mul nsw i32 %5, %6, !dbg !93
  %reass.add = sub i32 %6, %4
  %reass.mul = shl i32 %reass.add, 1
  %add = add i32 %mul21, %5, !dbg !94
  %add25 = add i32 %add, %reass.mul, !dbg !95
  store i32 %add25, ptr %arrayidx6, align 4, !dbg !95, !tbaa !62
  %mul43127.neg = sub i32 -3, %4, !dbg !96
  %add44.neg134 = mul i32 %mul43127.neg, %6, !dbg !96
  %7 = add i32 %5, %4
  %reass.add129 = sub i32 %add25, %7
  %reass.mul130 = shl i32 %reass.add129, 1
  %add37 = add i32 %add44.neg134, 2, !dbg !97
  %sub47 = add i32 %add37, %reass.mul130, !dbg !98
  store i32 %sub47, ptr %arrayidx11, align 4, !dbg !98, !tbaa !62
  %8 = sub nsw i32 %4, %sub47, !dbg !99
  %sub61 = shl nsw i32 %8, 1, !dbg !99
  %mul62 = mul nsw i32 %6, %6, !dbg !100
  %add63 = add nsw i32 %sub61, %mul62, !dbg !101
  %mul64.neg = mul i32 %add63, -3, !dbg !102
  %9 = sub i32 %add25, %6, !dbg !103
  %10 = add i32 %9, %sub47, !dbg !104
  %sub65 = shl i32 %10, 1, !dbg !104
  %sub71 = add i32 %mul64.neg, %sub65, !dbg !105
  store i32 %sub71, ptr %arrayidx8, align 4, !dbg !105, !tbaa !62
  br label %for.inc, !dbg !106
```

```
for.inc:
  %indvars.iv.next = add nuw nsw i64 %indvars.iv, 1, !dbg !107
  call void @llvm.dbg.value(metadata i64 %indvars.iv.next, metadata !56,
  ... metadata !DIExpression()), !dbg !69
  %exitcond.not = icmp eq i64 %indvars.iv.next, %wide.trip.count, !dbg !70
  br i1 %exitcond.not, label %for.cond.cleanup, label %for.body, !dbg !72,
  ... !llvm.loop !108
  T | F
```

```
for.cond.cleanup:
  %2 = load i32, ptr @EventSet, align 4, !dbg !77, !tbaa !62
  %call73 = tail call i32 @PAPI_stop(i32 noundef %2, ptr noundef nonnull
  ... @CounterValues) #10, !dbg !79
  call void @llvm.dbg.value(metadata i32 %call73, metadata !54, metadata
  ... !DIExpression()), !dbg !58
  %cmp74.not = icmp eq i32 %call73, 0, !dbg !80
  br i1 %cmp74.not, label %if.end77, label %if.then75, !dbg !81
  T | F
```

```
if.end77:
  %call78 = tail call double @getTimeMiliSeconds(), !dbg !114
  %sub79 = fsub double %call78, %call, !dbg !115
  store double %sub79, ptr @ExecutionTime, align 8, !dbg !116, !tbaa !117
  ret void, !dbg !119
```

```
if.then75:
  %11 = load ptr, ptr @stderr, align 8, !dbg !112, !tbaa !75
  %call76 = tail call i32 (ptr, ptr, ...) @fprintf(ptr noundef %11, ptr
  ... noundef nonnull @.str, i32 noundef %call73, ptr noundef nonnull @.str.1, i32
  ... noundef 53) #11, !dbg !112
  tail call void @exit(i32 noundef %call73) #12, !dbg !112
  unreachable, !dbg !112
```